

**AMENDMENTS TO THE CLAIMS:**

1. (Currently Amended) A system for ~~limiting selectively granting~~ access to the functionality of ~~one or more~~ a plurality of software applications to a plurality of users, the system comprising:

a first memory configured to store first data related to each of the ~~one or more~~ plurality of software applications, and ~~the first memory further configured to store second data related to specifying entitlements of each of one or more~~ the plurality of users to access functions of any of the software applications; and

a rules checker in communication with the software applications and the first memory, said rules checker configured to:

receive at least one query, said query originating from any particular one of the software applications, wherein the query is generated in response to an input received from one of the plurality of users with respect to the particular software application, and

forward a message to the particular software application in response to the query, wherein the message is generated based on the query and the second data;

wherein said message provides instructions to the particular software application regarding entitlements of ~~one of the users~~ the one of the plurality of users to access a particular function of the particular software application.

2. (Original) The system according to claim 1, wherein the first memory is a relational database.

3. (Currently Amended) The system according to claim 1, wherein the each of the ~~one or more~~ plurality of software applications are implemented on one of a mainframe and a distributed computing system.

4. (Original) The system according to claim 1, further comprising:  
a second memory configured to store proprietary data useful to the particular software application, and  
wherein said message provides information to the particular software application regarding authorization to output portions of the proprietary data.

5. (Previously presented) The system according to claim 1, wherein the respective first data for each software application includes an identification of hierarchically arranged functions associated with that software application.

6. (Previously presented) The system according to claim 5, wherein the query further comprises information relating to the one of the users and relating to at least one of the functions associated with the particular software application, and  
wherein the message relates to that one user's authorization to access the at least one function.

7. (Original) The system according to claim 5, wherein the identification of hierarchically arranged functions include functions, sub-functions, and sub-sub functions.

8. (Original) The system according to claim 1, wherein the respective first data for each software application includes an identification of data fields associated with that software application.

9. (Original) The system according to claim 8, wherein the query further comprises information relating to one of the users and relating to at least one of the data fields associated with the particular software application, and

wherein the message relates to that one user's authorization to access the at least one field.

10. (Original) The system according to claim 1, wherein the rules checker is further configured to:

generate the message based on the query, the first data and the second data.

11. (Currently Amended) The system according to claim 1, wherein:  
the respective second data for each of the users includes at least one role, from among a plurality of roles, associated with that particular user, and

the respective first data for each software application includes:

an identification of hierarchically arranged functions associated with that software application, and

[[an]] a description of which of the plurality of roles is entitled to access each of the functions.

12. (Original) The system according to claim 11, wherein:

the query includes an identification of a specific one of the users and a specific one of the functions associated with the particular software application;

the rules checker is further configured to generate the message based on the query, the first data and the second data; and

the message instructs the particular software application regarding that specific user's entitlement to access that specific function.

13. (Original) The system according to claim 12, wherein the rules checker logs data relating to an instance in which the specific user is not entitled to access that specific function.

14. (Original) The system according to claim 4, wherein the respective second data for each of the users includes an access level from among a plurality of access levels, associated with that particular user, said access level determining an authorization of that particular user to access proprietary data within the second memory, and

the rules checker is further configured to generate the message based on the query, the first data and the second data.

15. (Original) The system according to claim 1, further comprising:

an administrative application configured to facilitate administration of the first and second data.

16. (Currently Amended) The system according to claim 15, wherein the administrative application is further configured to manipulate the first data according to which of a plurality of clients ~~one or more of the~~ plurality of users is associated with.

17. (Original) The system according to claim 15, wherein the administrative application is further configured to manipulate the first data according to an identity of a particular one of the users.

18. (Original) The system according to claim 15, wherein the administrative application is further configured to manipulate the first data according to which of a plurality of roles a particular one of the users is associated with.

19. (Original) The system according to claim 15, wherein the administrative application is further configured to manipulate all the first data relating to a specific one of the software applications.

20. (Original) The system according to claim 15, wherein the administrative application is further configured to manipulate all the first data relating to one of a plurality of functions associated with a specific one of the software applications.

21. (Original) The system according to claim 1, further comprising:  
an auditing application configured to facilitate auditing of the first and second data and any additional data generated by the rules checker.

22. (Original) The system according to claim 21, wherein the auditing application is further configured to provide a history, upon request, of messages forwarded by the rules checker.

23. (Original) The system according to claim 22, wherein the history emphasizes those messages related to a failed attempt to access the particular function.

24. (Original) The system according to claim 22, wherein the auditing application is further configured to provide a history, upon request, of changes to one or both of the first data and the second data.

25. (Currently Amended) A method for providing application-level security, said method comprising the steps of:

storing first data relating to a plurality of software applications;

storing second data specifying entitlements of each of relating to a plurality of users to access functions of the software applications;

receiving a query from a particular one of the software applications, wherein the query is generated in response to an input from one of the plurality of users with respect to the particular software application;

in response to the query, forwarding a message to the particular software application, said message being generated based on the second data and the query, and providing instructions to the particular software application regarding entitlements of ~~a particular user~~ the one of the plurality of users to access a function of the particular software application.

26. (Original) The method according to claim 25, further comprising the step of:  
generating the message based on the query, the first data and the second data.

27. (Original) The method according to claim 26, wherein the query includes an  
identification of the particular user and the function.

28. (Original) The method according to claim 25, wherein the second data includes  
for each user, one or more of an associated user ID, client name, role, and business level.

29. (Original) The method according to claim 28, wherein the first data includes for  
each software application an identification of associated hierarchically arranged functions and  
characteristics of those users authorized to access each such function.

30. (Original) The method according to claim 29, further comprising the steps of:  
correlating the first and second data to determine authorized functions, said authorized  
functions being those particular functions of each software application which are accessible by a  
specified user;

generating the message based on the query and the determination of authorized functions,  
wherein said query includes an identification of the particular user and the function.

31. (Original) The method according to claim 28, wherein the first data includes for  
each software application an identification of associated data fields and characteristics of  
entitlements of users to each data field.

32. (Original) The method according to claim 31, further comprising the steps of:  
correlating the first and second data to determine authorized data field operations, said authorized operations being those particular operations of each data field which are permitted to a specified user; and

generating the message based on the query and the determination of authorized operations, wherein said query includes an identification of the particular user and of a predetermined data field.

33. (Original) The method according to claim 29, further comprising the steps of:  
storing proprietary data useful to ~~one or more of the~~ plurality of software applications;  
and

storing third data relating to accessibility of the proprietary data.

34. (Original) The method according to claim 33, further comprising the steps of:  
correlating the first, second and third data to determine authorized data accesses, said authorized data accesses being those particular data accesses of the proprietary data which are permitted to a specified user; and

generating the message based on the query and the determination of authorized data accesses, wherein said query includes an identification of the particular user and of predetermined proprietary data.

35. (Original) The method according to claim 25, further comprising the step of:



creating a log entry relating to the message if the message indicates instructions which prohibit the particular software application access to the function.

36. (Original) The method according to claim 29, further comprising the step of: administering the first and second data by manipulating one or both of the first and second data according to which of a plurality of clients ~~one or more of the~~ plurality of users is associated with.

37. (Original) The method according to claim 29, further comprising the step of: administering the first and second data by manipulating one or both of the first and second data according to the identity of a particular one of the users.

38. (Original) The method according to claim 29, further comprising the step of: administering the first and second data by manipulating one or both of the first and second data according to which of a plurality of roles ~~one or more of the~~ plurality of users is associated with.

39. (Original) The method according to claim 29, further comprising the step of: administering the first and second data by manipulating all the first data relating to a specific one of the software applications.

40. (Original) The method according to claim 29, further comprising the step of:  
administering the first and second data by manipulating all the first data relating to one of  
a plurality of functions associated with a specific one of the software applications.

41. (Currently Amended) A computer readable medium bearing instructions for  
providing application-level security, said instructions being arranged to cause one or more  
processors upon execution thereof to perform the steps of:

storing first data relating to a plurality of software applications;

storing second data specifying entitlements of each of ~~relating to~~ a plurality of users to  
access functions of the software applications;

receiving a query from a particular one of the software applications, wherein the query is  
generated in response to an input received from one of the plurality of users with respect to the  
particular software application;

in response to the query, forwarding a message to the particular software application, said  
message being generated based on the query and the second data, and providing instructions to  
the particular software application regarding entitlements of the one of the plurality of users a  
~~particular user~~ to access a function of the particular software application.

42. (Previously presented) The system according to claim 14, further comprising:  
a non-volatile data store indicating a hierarchical arrangement of the plurality of access  
levels, and

wherein the rules checker is further configured to consult the data store when determining  
the authorization of that particular user.

43. (Previously presented) The system according to claim 21, wherein the auditing application is further configured to provide real-time data logging and retrieval.

44. (Previously presented) The system according to claim 2, wherein any updates to data within the relational database are performed in real-time and the rules checker is further configured to use the updated data.

45. (Previously presented) The system according to claim 1, wherein the particular software application is a simulation application, said simulation application is configured to:

provide in the query to the rules checker a simulated user identity and a simulated secured resource identity;

receive from the rules checker the message forwarded by the rules checker; and

determine the entitlements of the simulated user to access the simulated secured resource.

46. (Previously presented) The system according to claim 5, wherein the query requests a listing of entitlements for the one user, said listing identifying the entitlements for every application, function or proprietary data associated with the one user, and wherein the message includes said listing.

47. (Previously presented) The system according to claim 46, wherein query includes filtering parameters such that the listing includes only those entitlements which satisfy the filtering parameters.

48. (Previously presented) The system according to claim 47, wherein the filtering parameters specify one or more of a user role, a function identity, an application identity, a user identity, and a data access level.

49. (Previously presented) The system according to claim 14, wherein the authorization of the particular user to access proprietary data depends, at least in part, on the particular software application identity.

50. (Previously presented) The system according to claim 14, wherein the authorization of the particular user to access proprietary data depends, at least in part, on the particular function identity.

51. (Previously presented) The system of claim 3, wherein the one of the users utilizes a remote system to access the particular function of the particular software application, and is not signed on to the operating system based on which the rules checker operates.

52. (Previously presented) The system of claim 1, wherein:  
the one of the users is an organization; and  
the second data specifies entitlements of the organization to access one or more functions of the particular software application, and entitlements of at least one individual user in the organization to access at least one of the one or more functions of the particular software application that the organization is entitled to access.

53. (Previously presented) The system of claim 1, wherein:  
the one of the users is an organization having associated proprietary data;  
the second data includes an access level associated with an individual user within the organization, wherein the access level is selected from among a plurality of access levels arranged in a hierarchical structure, and specifies an authorization to access at least part of the proprietary data associated with the organization; and  
the individual user is entitled to access all data accessible to an access level hierarchically subordinate to the access level associated with the individual user.

54. (Previously presented) The system of claim 53, wherein more than one hierarchical structure is provided, each of the more than one hierarchical structure is associated with a function of the organization, an organization structure of the organization, or geographical regions.

55. (Previously presented) The system of claim 53, wherein the access level is assigned to the individual user based on the individual user's role within the organization or the individual user's job function.

56. (Previously presented) The system of claim 1, wherein:  
the one of the users is an organization having associated proprietary data; and  
the second data specifies an authorization granted to an individual user of the organization to access at least part of the proprietary data associated with the organization, based on a function to be performed by the individual user.

57. (Previously presented) The system of claim 9, wherein the message includes that one user's authorized action on the at least one field, or the appearance of the at least one field to that one user.

58. (Currently amended) The system of claim 1, wherein the entitlements of the ~~one~~ one or more plurality of users are dynamically configurable without the need to have a specific user to sign-off and sign-on again.

59. (Previously presented) The system of claim 1, wherein:  
the one of the users is an organization; and  
the second data specifies entitlements of the organization to access one or more functions of the particular software application, and entitlements of a role of the organization to access at least one of the one or more functions of the particular software application that the organization is entitled to access; and  
a least one individual user of the organization is assignable to the role.

60. (New) A system for granting access to the functionality of one or more software applications, comprising:  
a first memory configured to store first data related to each of the one or more software applications;  
the first memory further configured to store second data related to each of one or more users of any of the software applications; and

a rules checker in communication with the software applications and the first memory,  
said rules checker configured to:

receive at least one query, said query originating from any particular one of the  
software applications, and

forward a message to the particular software application in response to the query;

wherein said message provides instructions to the particular software application  
regarding entitlements of one of the users to access a particular function of the particular  
software application, based on the role of the one of the users or a function to be performed by  
the one of the users.